



PTO/SB/08a (08-03)  
Approved for use through 07/31/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 4

### Complete if Known

|                        |                         |
|------------------------|-------------------------|
| Application Number     | 10/600,839              |
| Filing Date            | 23 June 2003            |
| First Named Inventor   | Louis-Philippe LEFEBVRE |
| Art Unit               | 1742                    |
| Examiner Name          |                         |
| Attorney Docket Number | 15037-US-CIP            |

### U. S. PATENT DOCUMENTS

| Examiner Initials* | Cite No. <sup>1</sup> | Document Number                          | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear |
|--------------------|-----------------------|--|--------------------------------|--|---|
|                    |                       | Number-Kind Code <sup>2</sup> (if known) |                                |  |   |
| DJ                 |                       | US- 3,471,473                            | 10-07-1969                     | Walker   |   |
|                    |                       | US- 5,881,353                            | 03-09-1999                     | Kamigata et al.                                    |   |
|                    |                       | US- 5,865,237                            | 02-02-1999                     | Schorghuber et al.                                 |   |
|                    |                       | US- 5,848,351                            | 12-08-1998                     | Hoshino et al.                                     |   |
|                    |                       | US- 5,759,400                            | 06-02-1998                     | Fanning  |   |
|                    |                       | US- 5,640,669                            | 06-17-1997                     | Harada et al.                                      |   |
|                    |                       | US- 5,296,261                            | 03-22-1994                     | Bouet et al.                                       |   |
|                    |                       | US- 5,181,549                            | 01-26-1993                     | Shapovalov   |   |
|                    |                       | US- 5,151,246                            | 09-29-1992                     | Baumeister et al.                                  |   |
|                    |                       | US- 5,132,080                            | 07-21-1992                     | Pfeil  |   |
|                    |                       | US- 5,112,696                            | 05-12-1992                     | Roberts  |   |
|                    |                       | US- 4,973,358                            | 11-27-1990                     | Jin et al.   |   |
|                    |                       | US- 4,957,543                            | 09-18-1990                     | Babjak et al.                                      |   |
|                    |                       | US- 4,775,598                            | 10-04-1988                     | Jaechel  |   |
|                    |                       | US- 4,713,277                            | 12-15-1987                     | Akiyama et al.                                     |   |
| DJ                 |                       | US- 4,569,821                            | 02-11-1986                     | Duperray et al.                                    |   |
|                    |                       | US- 4,430,294                            | 02-07-1984                     | Tracey   |   |
|                    |                       | US- 4,251,603                            | 02-17-1981                     | Matsumoto et al.                                   |   |

### FOREIGN PATENT DOCUMENTS

| Examiner Initials* | Cite No. <sup>1</sup> | Foreign Patent Document  | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines,<br>Where Relevant Passages<br>or Relevant Figures Appear | T <sup>6</sup> |
|--------------------|-----------------------|--|--------------------------------|--|---|----------------|
|                    |                       | Country Code <sup>3</sup> Number * Kind Code <sup>5</sup> (if known) |                                |  |   |                |
| DJ                 |                       | WO 91/03578  | 03-21-1991                     |  |   |                |
|                    |                       | WO 92/03583  | 03-05-1992                     |  |   |                |
|                    |                       | WO 91/01387  | 02-07-1991                     |  |   |                |
| DJ                 |                       | WO 91/19823  | 12-26-1991                     |  |   |                |
|                    |                       | WO 94/09931  | 05-11-1994                     |  |   |                |

Examiner  
Signature

Date  
Considered

6/26/04

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet

2

of

4

**Complete if Known**

|                        |                         |
|------------------------|-------------------------|
| Application Number     | 10/600,839              |
| Filing Date            | 23 June 2003            |
| First Named Inventor   | Louis-Philippe LEFEBVRE |
| Art Unit               | 1742                    |
| Examiner Name          |                         |
| Attorney Docket Number | 15037-US-CIP            |

**U. S. PATENT DOCUMENTS**

| Examiner Initials* | Cite No. <sup>1</sup> | Document Number                          | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear |
|--------------------|-----------------------|--|--------------------------------|--|---|
|                    |                       | Number-Kind Code <sup>2</sup> (if known) |                                |  |   |
| CP                 |                       | US- 4,225,346                            | 09-30-1980                     | Helliker et al.                                    |   |
|                    |                       | US- 3,897,221                            | 07-29-1975                     | Salzer et al.                                      |   |
|                    |                       | US- 3,833,386                            | 09-03-1974                     | Wood et al.  |   |
|                    |                       | US- 3,796,565                            | 03-12-1974                     | Hancock et al.                                     |   |
|                    |                       | US- 3,794,481                            | 02-26-1974                     | Niebylski et al.                                   |   |
|                    |                       | US- 3,087,807                            | 04-30-1963                     | Allen et al.                                       |   |
|                    |                       | US- 3,078,552                            | 02-26-1963                     | Grandey  |   |
|                    |                       | US- 6,171,532 B1                         | 01-09-2001                     | Sterzel  |   |
|                    |                       | US- 5,213,612                            | 05-25-1993                     | Minnear et al.                                     |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |
|                    |                       | US-                                      |                                |  |   |

**FOREIGN PATENT DOCUMENTS**

| Examiner Initials* | Cite No. <sup>1</sup> | Foreign Patent Document   | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines,<br>Where Relevant Passages<br>or Relevant Figures Appear | T <sup>6</sup> |
|--------------------|-----------------------|---|--------------------------------|--|---|----------------|
|                    |                       | Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known) |                                |  |   |                |
| CP                 |                       | WO 92/21457   | 12-10-1992                     |  |   |                |
|                    |                       | EP 0 210 803  | 09-20-1989                     |  |   |                |
|                    |                       | FR 1,573,864  | 06-02-1969                     |  |   |                |
|                    |                       | JP 05-006763  | 01-14-1993                     |  |   |                |
|                    |                       | FR 1,307,084  | 09-10-1962                     |  |   |                |

Examiner  
SignatureDate  
Considered

6/26/04

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

|  |              |                          |                         |
|--|--------------|--------------------------|-------------------------|
| Substitute for form 1449A/PTO<br><br><b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br>(Use as many sheets as necessary) |              | <b>Complete if Known</b> |                         |
|  |              | Application Number       | 10/600,839              |
|  |              | Filing Date              | 23 June 2003            |
|  |              | First Named Inventor     | Louis-Philippe LEFEBVRE |
|  |              | Art Unit                 |                         |
| Examiner Name  |              |                          |                         |
| Attorney Docket Number   | 15037-US-CIP |                          |                         |

| U. S. PATENT DOCUMENTS |                       |  |                                |  |   |
|------------------------|-----------------------|--|--------------------------------|--|---|
| Examiner Initials*     | Cite No. <sup>1</sup> | Document Number                          | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear |
|                        |                       | Number-Kind Code <sup>2</sup> (if known) |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |
|                        |                       | US-                                      |                                |  |   |

| FOREIGN PATENT DOCUMENTS |                       |   |                                |  |   |                |
|--------------------------|-----------------------|---|--------------------------------|--|---|----------------|
| Examiner Initials*       | Cite No. <sup>1</sup> | Foreign Patent Document   | Publication Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages, Columns, Lines, Where<br>Relevant Passages or Relevant<br>Figures Appear | T <sup>6</sup> |
|                          |                       | Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known) |                                |  |   |                |
|                          |                       | UK 1 501 115  | 02-15-1978                     |  |   |                |
|                          |                       | WO 01/05542 A1  | 01-25-2001                     |  |   |                |
|                          |                       | DT 1 483 702  |                                |  |   |                |
|                          |                       | EP 0 799 810 A2   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |
|                          |                       |   |                                |  |   |                |

|                    |   |                 |         |
|--------------------|---|-----------------|---------|
| Examiner Signature |  | Date Considered | 6/26/04 |
|--------------------|---|-----------------|---------|

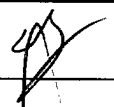

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

|   |   |                          |                         |                        |              |
|---|---|--------------------------|-------------------------|------------------------|--------------|
| Substitute for form 1449B/PTO   |   | <b>Complete if Known</b> |                         |                        |              |
| <b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br>(Use as many sheets as necessary) |   | Application Number       | 10/600,839              |                        |              |
|   |   | Filing Date              | 23 June 2003            |                        |              |
|   |   | First Named Inventor     | Louis-Philippe LEFEBVRE |                        |              |
|   |   | Art Unit                 | 1742                    |                        |              |
|   |   | Examiner Name            |                         |                        |              |
| Sheet   | 4 | of                       | 4                       | Attorney Docket Number | 15037-US-CIP |

| NON PATENT LITERATURE DOCUMENTS   |                       |   |                |
|---|-----------------------|---|----------------|
| Examiner Initials*  | Cite No. <sup>1</sup> | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T <sup>2</sup> |
|    |                       | SORIA, R., "Overview on industrial membranes", Catalysis Today, 25, 1995, pages 285-290.  |                |
|   |                       | SCHWARTZ, Daniel S. et al., "Porous and cellular materials for structural applications", Materials Research Society Symposium Proceedings, Vol. 521.  |                |
|   |                       | BANHART, J. et al. "Metal Foams", Fraunhofer USA Metal Foam Symposium, 1997.  |                |
|   |                       | KAPTSEVICH, V.M., et al. "Influence of the morphology of the original powder particles on the properties of porous materials", 1990, pages 308-313.   |                |
|   |                       | SOLAIYAN, C. et al., "Preparation and characterisation of porous electrodes from nickel powder for fuel cells", Indian Journal of Chemical Technology, Vol. 6, 1999, pages 48-54.   |                |
|   |                       | KALAIYAN, G. Paruthimal, et al., "Analysis of porous iron electrodes by scanning electron microscopy", B. Electrochem, 1989, pages 99-105.  |                |
|  |                       | STILLER, C. "Manufacturing and characterisation of low density titanium parts", pages 189-194.  |                |
|   |                       |   |                |
|   |                       |   |                |
|   |                       |   |                |

|                    |   |                 |         |
|--------------------|---|-----------------|---------|
| Examiner Signature |  | Date Considered | 6/26/04 |
|--------------------|---|-----------------|---------|

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.